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AUTHOR Shelley, Patricia A.
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ABSTRACT

Arguing that recommended lists for hospital libraries are too general, this use study evaluated the journal collection of a small hospital library. It is noted that the literature on use studies indicates that, with the availability of resources through computer searches, interlibrary loans, consortiums and networks, journal evaluation is no longer limited to an individual library's collection. The requests for interlibrary loans were used to analyze the weaknesses of the Northside Medical Center Library collection (Youngstown, Ohio). It was discovered that journals which were not used were those that were not indexed in popular medical indexes or received low scores in citation analysis, and that the MEDLINE computer database is increasingly becoming a priority in establishing what should be in the hospital library journal collection. This study also found that the only solution to keeping a quality journal collection in a small hospital library is microfiche, and that it is not possible for a small hospital library to supply all of the available medical information that will be requested. It was concluded that evaluation of serial collections results in a greater awareness of the literature and allows the investigator to have more assurance and accuracy in establishing a comprehensive and efficient medical journal collection. A list of journals recommended for the Northside Medical Center Library is included. A copy of a data collection form is appended. (26 references) (MAB)

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JOURNAL EVALUATION RESEARCH OF THE NORTHSIDE MEDICAL CENTER LIBRARY OF THE WESTERN RESERVE CARE SYSTEM IN YOUNGSTOWN, OHIO

A Master's Research Paper submitted to the
Kent State University School of Library Science
in partial fulfillment of the requirements
for the degree Master of Library Science

by

Patricia A. Shelley

July, 1991

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ABSTRACT

Rising costs, the information explosion and the lack of space necessitate evaluation research to assure an efficient well-managed collection of quality journals. Recommended lists for hospital libraries were found to be too general, for the journal collection should be a reflection of the hospital's departments and it is only through a use study that the collection can be tailored to meet the needs of the staff. This use study evaluated the journal collection of a small hospital library. The literature on use studies indicates that libraries are changing and journal evaluation is no longer limited to an individual library. A use study must now consider computer searches, inter-library loans, consortiums and networks. The requests for inter-library loans were used to analyze the weaknesses of the North-side Medical Center Library collection. It was discovered that journals which were not used were those which were not indexed in popular medical indexes or received low scores in citation analysis. The MEDLINE computer database is increasingly becoming a priority in establishing what should be in the hospital library journal collection. This study found that the only solution to keeping a quality journal collection in a small hospital library is microfiche. It is not possible for a small hospital library to supply all of the available medical information which will be requested. Evaluation of serial collections results in a greater awareness of the literature and allows the investigator to have more assurance and accuracy in establishing a comprehensive and efficient medical journal collection.

Master's Research Paper by

Patricia A. Shelley

B.A., Youngstown State University, 1964

M.L.S., Kent State University, 1991

Approved by

Adviser Lois Buttlar Date 7-19-91

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CHAPTER 1

INTRODUCTION

Rationale

"Historically, within the academic and clinical setting, serials publications make up the largest portion of the collections of biomedical literature."[1] Since the serials budget of most hospital libraries is 70% to 85% of the total library budget,[2] evaluation of the journal collection should be made on a regular basis to assure an economically efficient and well-managed collection.

Serials evaluation at the Northside Medical Center library must be concerned with the following factors:

1. Cost - The rising cost of serials causes the library to reduce subscriptions every year.
2. Storage Space - Shelf space has always been a problem and decisions about weeding and/or microfiche need to be made.
3. Indexing - It needs to be determined whether the journals are indexed in print or on databases or are listed in Science Citation Index.
4. Quality Assurance - Hospital departments and staff constantly change to meet community needs. The library must meet the challenges of change.

Purpose

The purpose of this study is to conduct a journal evaluation of the Northside Medical Center library to determine the effectiveness of its current acquisitions and to identify weaknesses in the collection. The specific objectives are to streamline and tailor the serials collection to meet the immediate demands of the medical center and to provide guidelines and recommendations for future journal collection development in a small adult/children's teaching hospital library. It is hoped that this research will provide valuable input for future decisions about the development of the journal collection.

This evaluation research will examine the effectiveness of the collection and determine how to enhance and improve upon what already exists. It is hoped that the data collected from this research will shed new light and provide valuable information which will eventually contribute to a comprehensive and efficient medical journal collection.

Background

The Northside Medical Center library is a unit of the Western Reserve Care System This library, consisting of approximately 1800 books and 150 journals, serves the North-

side Medical Center and Tod's Children's Hospital. Northside Medical Center has 321 beds and admitted 10,810 patients in 1990 and Tod's Children's Hospital has 93 beds and admitted 2665 patients.[3] These hospitals are teaching institutions which are affiliated with the Northeastern Ohio Universities College of Medicine (NEOUCOM). The medical library serves 247 physicians and 115 residents. The library is available for hospital administrators, medical students, nurses, nursing students and students in allied health fields. In the realm of journals, one librarian, one library assistant and one clerk provide services which include computer searches, interlibrary loans, and photocopying of articles.

The main unit of the hospital library needs to have core journals for each hospital department: pediatrics, surgery, child health, child and adult psychiatry, adult and adolescent drug rehabilitation, women's care center, cardiac rehabilitation, emergency medicine and administration. Because of the lack of a large centralized space, family practice, anesthesiology, pathology and radiology maintain their own department libraries.

A journal evaluation has never been conducted at the Northside Medical Center Library. The collection was developed by using the Brandon List and recommendations of physicians. The Brandon list is a generic or general list ..."intended as a selection guide for the small or medium-

sized biomedical library in a hospital or academic setting."[4]

There are no formal guidelines for journal evaluation available for a small adult/children's teaching hospital.

Definition of Terms

The following definitions were used in this study:

EVALUATION RESEARCH: The application of the scientific method to determine how well a program is performing.[5] The evaluation of the journal collection is scientific research which will produce new knowledge about the existing journal collection.

JOURNAL: A periodical, especially one containing scholarly articles and/or disseminating current information and development in a particular subject field.[6]

USERS: Hospital staff and students who have access to the library and use the collection.

INTERLIBRARY LOAN USE: Interlibrary loan requests reflect what the journal collection is lacking. Bastille suggests that interlibrary loans should be included in a use study to provide a list of titles that might satisfy total demand.[7]

IN-HOUSE USE: Any use of the journal collection as determined by the presence of a volume on a study table or carrel or on the shelving truck by the Xerox machine.[8]

SHELVING TRUCK: A mobile shelving unit where all journals

are placed and counted before reshelving.

Limitations

This research was concerned only with the main unit of the hospital libraries. There are departmental libraries in family practice, anesthesiology, pathology and radiology which contain core journals. One specific example would be that the radiology department subscribes to Radiology and American Journal of Radiology. To avoid duplication, the hospital library's main unit does not subscribe to those journals.

It is because of the lack of a large centralized space that the library has been scattered throughout the hospital. In the final analysis, the results will not fully reflect the entire system because the use of thirty departmental journal titles was not included in the final statistics.

Another limitation of the use study was that the library was available to physicians and students twenty-fours a day and was only staffed twelve hours a day. If a staff member saw a user replacing a journal before it was counted, the staff member would record the statistics. Of course, if journals were used and replaced when staff was not on duty, the statistics were lost. This use study recognizes that the final statistics are lower than the actual usage.

CHAPTER 2

REVIEW OF THE LITERATURE

Most of the studies on biomedical journal evaluation has been done in highly specialized libraries, such as a medical library in a university or a hospital library in a veterinarian's hospital. Veenstra conducted "a one-year journal use study in a veterinary medical library" and identified the top fifty veterinary journal titles.[9] Langloise's usage study of the John Hopkins University Applied Physics Laboratory found which journals could be safely converted to microfilm.[10] Bastille's use study conducted at the Massachusetts General Hospital concluded that hospital libraries should conduct use studies frequently to keep a cost effective collection.[11]

There are no recent studies for journal evaluation research in a medical library which services a teaching and an adult/children's hospital.

The concepts which surface most frequently in the review of the literature on periodical evaluation are 1) cost and cost effectiveness, 2) interlibrary loans from networks and consortiums, 3) microfiche, 4) citation analysis, and 5) indexing.

Costs: Journal subscription implies a costly long-range

commitment,[12] and is a major consideration of most journal evaluations.

> During the last few years it has become more and more apparent that we are facing a crisis in regard to the conditions which exist in the publication of medical and biological literature...The tremendous number of journals being published and the continued increase in the cost of yearly subscriptions have made it increasingly difficult for libraries to maintain adequate subscription lists. [13]

Cunningham's statement describing the "current" problem of the rising cost of journals was published in 1935. A more current and typical statement issued by Holden in 1987 was that..."Research libraries across the country face large cancellations of subscriptions to scientific journals next year because of leaping prices."[14]

The battle between publishers and librarians over the continuing rising cost of scientific journals has been going on for a long time. Hafner explains that..."From the publisher's perspective, scholarly journals publishing is a business,"[15] and they are concerned with covering cost and reaping profit. In contrast, librarians feel that it is unethical for publishers "to elevate prices artificially to earn excess returns."[16]

Abelson reports that the present problem of journal costs evolved because the scientific community was slow to recognize an opportunity and develop an enterprise of publishing. Commercial publishers seized the opportunity, established monopolies, and librarians have been forced to

pay the inflated price.[17]

Brandon estimated that during one twenty-four year period, 1965 to 1989, the average price per journal increased by 633% .90 to $101.92).[18] Journal price increases will continue to strain future budgets, and librarians, who are fully aware of this, have been taking other measures to maintain quality libraries. One such step is to increase cooperative, resource-sharing efforts.[19]

Interlibrary loans from networks and consortiums: The concept of interlibrary loans as a factor in journal evaluation is relatively new. Darling suggests that "local evidence of need may be identified ...by interlibrary loan requests."[20]

Hunt presents a mathematical approach. He states: "By comparing all cost aspects of owning a journal title with all cost aspects of procuring requested articles from that title through interlibrary loan, the library could logically choose the most cost-effective alternative for each journal."[21]

Various formulas are being devised to examine the cost of purchasing a journal as compared to the availability of an interlibrary loan. Many librarians have already dropped the expensive subscriptions which are rarely used. When the interlibrary loan cost is $10.00 per article, an $870.00 savings will be generated from a $900.00 title used only three times.[22]

Telefacsimile will no doubt add new dimensions to journal

evaluation. If a journal article can be obtained from another library in a matter of minutes, purchasing that $900.00 journal could be considered financially unwise.

Microfiche: Another cost cutting measure in journal evaluation is microfiche, which is inexpensive and compact and can greatly expand the biomedical literature in a small medical library. The major problem which was presented in the Saracevic project for the Rockefeller Foundation was the publishers' reluctance to grant permission to reproduce in microform. Saracevic reports that:

- six weekly journals granted permission to be microfilmed immediately upon publication;
- eighty journals granted permission to be microfilmed on a quarterly basis;
- twelve journals granted permission after one year;
- seven journals denied permission to be microfilmed.[23]

Physicians and students want the very latest medical information published, especially in regard to treatment of disease. The journal publishers realize this and are reluctant to allow immediate microfilming which would compete with the printed issues and lose revenues.[24]

Citation analysis: Most physicians can readily name the important medical journals in their field; however, the results will be subjective. A more accurate measurement of journal value is citation analysis which has increasingly become an important bibliographic tool in evaluation and

deselection of journals. Garfield states that "the use of citation analysis quantifies the measure of importance," and accurately relates "which medical journals have the greatest impact."[25]

Broadus confirms that The Journal Citation Reports (JCR) offers a good assessment of a journal's standing in the academic community.[26] Smith, in his study on JCR, finds that the JCR is most effective after the use study has been conducted and a list of prospective journals for deselection has been prepared.[27] Smith concludes that if the journal in question for deselection "is not in the top 60% to 80% of JCR, a decision to discontinue it is probably sound."[28]

Indexing: The same basic concept applies to indexing. If a medical journal is not indexed in the National Library of Medicine's database or in Index Medicus, Hospital Literature Index, Culmulative Index to Nursing and Allied Health Literature and International Nursing Index, its value to the biomedical scientists is questionable.[29] Lancaster presented a procedure of checking subject headings in indexes and concluded that "references appearing in recently indexed articles are likely to represent items that users will seek in a medical library."[30]

In review, the rising cost of journal subscriptions, the lack of space for physical growth, and the desire to establish a quality journal collection have precipitated this journal evaluation research.

CHAPTER 3

METHODOLOGY

The journal evaluation was conducted for a period of six months to identify problems, weaknesses, and strengths of the collection. Since the journals are not permitted to be removed from the library, in-house usage was recorded for a period of six months, beginning on November 1, 1990 and ending April 1, 1991. The following methods were adapted and designed to gain the most information without placing unreasonable burdens on the users.

1. New journals - A form was stapled to the front cover of the journal when the journal was checked in. The users were asked to initial the form when they used the journal. The forms were collected at the end of the survey and a count was taken (see appendix A).

2. Signs were posted throughout the library stating that a survey was being conducted. Users were requested not to reshelve any journals (see appendix B).

3. A shelving truck was placed next to the Xerox machine so that the used journals could be placed in an area to be counted.

4. A notebook containing a list of journals was used for

the count. Any journal on the shelving truck or on the study tables was marked in the journal notebook. A set of symbols was used to indicate age. Journals from 1980-1991 were marked with a "1"; 1970-1979 with an "x"; 1960-1969 with a "c"' and anything before 1959 with an "O".

CHAPTER 4

FINDINGS

Factors Which Contribute To Journal Usage At The Northside Medical Center Library

Journal usage at the Northside Medical Center library is effected by several factors. One of the objectives of this study was to examine these usage factors and determine which journals are important to the hospital staff. Of the many influences contributing to the usage of journals at the hospital library, some of the more apparent ones are:

- patient care;
- current contents;
- medical education;
- grand rounds;
- computer searches;
- indexes and bibliographies;
- research and publishing;
- networks and consortiums.

Patient Care: The library has to have a strong core collection and have immediate access to information in consortiums and networks for physicians who are trying to diagnose and treat patients. Patient care accounts for the largest per-

centage of use in the library and is without a doubt the first priority to consider in collection development.

Current contents: "The Institute for Scientific Information publishes a weekly compendium of the table of contents of the latest issues of a wide range of journals."[31] The results of this effort is a journal called Current Contents. The hospital library produces a personalized version of Current Contents. Every month, the table of contents are photocopied from specific journals and sent to persons who request this service. Specified journals' tables of content are sent to specific departments: psychiatry journals tables of contents are sent to psychiatrists and psychiatric departments; pediatric journals tables of content are sent to pediatric departments and pediatricians on staff; and obstetric and gynecology/family practice tables of content go to their respective departments. These are the strong departments at the Northside Hospital. As was mentioned, there are other departmental libraries and unit libraries in the system. The South unit of the hospital library sends "current contents" to nursing, surgery and management.

This ultimately affected the use study. Journals which had their tables of content copied and circulated to staff and departments would have a higher use rate. On the other hand, if nobody requested information from the tables of content from a journal, it would indicate that the journal was not popular with the staff or that the publishers were not

presenting the type of material which was needed.

Medical Education: The hospital is affiliated with the Northeastern Ohio Universities College of Medicine and must maintain certain standards for accreditation. The medical students evaluate the library services every year so a journal collection which satisfies the students will reflect on the librarian, the library and the hospital. It is important to have journals which will satisfy their needs. Medical students are usually the most demanding users, for they are given assignments with time limits and need information quickly. Most of the medical students are assigned to pediatrics or family practice because these departments are highly respected by the academic community. The medical journal collection is well developed in pediatric and family practice areas in the hospital library. An examination of what was being requested through interlibrary loans determined the weaknesses in the collection.

There are also students from Youngstown University who do internships at the hospital. They include medical technology, dietary, nursing, radiology, and respiratory students. Since the university offers these programs, it is primarily its responsibility to provide journals for these students. However, when these students are doing internships at the hospital, they expect the library to provide information and have the journal articles which they need. The needs of this group are considered to be low priority since their

needs are provided for at Youngstown State University which is only two miles away. The budget and facilities of the hospital library make ifficult to meet the needs of this group. A closer look at the interlibrary loans requested by this group might produce a core collection possibility.

Nursing staff who teach classes at the hospital and conduct workshops and nurses who are earning advanced degrees at local universities need information from nursing journals. The hospital library currently has a very limited number of nursing journals. This use study exposed 780 interlibrary loan requests for nursing literature in journals.

Grand Rounds: The Western Reserve Care System is accredited by the Ohio State Medical Association on Accrediting to sponsor Continuing Medical Education programs for physicians. Physicians receive an hour of credit by the American Medical Association for attending these lectures. There are at least thirty Grand Rounds per month at the Northside Medical Center.

Physicians obtain the majority of their information from the hospital medical library for Grand Rounds lectures. Providing information for Grand Rounds lectures is a high priority item in the library. Physicians usually request a computer search on a given topic and request journal articles from the search. Grand Rounds generate interest in and excessive demand and use of journals.

Computer Searches: The hospital library provides free

computer searches to all staff members. The majority of searches are done on MEDLINE which is a part of the National Library of Medicine's computer database.[32] The computer database is becoming a strong force for journal evaluation. Librarians are checking as to what is indexed online, since these are the journals which will be requested.

The National Library of Medicine produces a List of Serials Indexed for Online Users. "The publication contains a listing for 7606 serial titles arranged alphabetically by abbreviated title followed by full title."[33] There are no value judgements on the importance of any of the journals listed, but if the library holds a journal title not listed in the National Library of Medicine database, it would probably be considered to be useless. In other words, if a journal was not indexed in the National Library of Medicine's database, it is a title which will receive little or no use.

Indexes and Bibliographies: The users at the hospital library use Index Medicus, Cumulated Index to Nursing and Allied Health Literature (CINAHL), and Hospital Literature Index. There is extensive use of bibliographies as students bring in recommended reading lists from their professors, residents request journal articles suggested by their department heads, and physicians study the bibliographies of their journal articles and request the original articles. Medical personnel are very conscientious about bibliographies. The requests from bibliographies and indexes ultimately affects

the use study.

Research and Publishing: The extensive interest in bibliographies is a part of the research and publishing which is a part of the Medical Education Center. A full-time researcher helps students write papers and aids physicians in publishing any new findings. Once again the library provides journal articles for this research. This is not considered to be a high priority item for the library. Research and publishing of articles is usually done at a leisurely pace and articles can be obtained by interlibrary loan if they are not available in the hospital library.

Networks and Consortiums: No library can remain an island in today's market of rising cost of journals. The hospital library is plagued not only by rising costs, but also by lack of space. To keep costs within the budget and expand the library beyond its own walls, networks and consortiums exist. They are important to selection and deselection of journal titles. First libraries interdependent needs for journal titles must be determined. The use study showed that other libraries are dependent on the Northside Medical Center library for pediatric, obstetric, and psychological journals.

The Northside Medical Center library belongs to Medical Periodicals In Northeastern Ohio (MPINO), O.H.I.O. Union List, and Greater Midwest Regional Medical Library Network (GMRMLN). The local, MPINO, is free of charge and delivers

journal articles in a few days while the O.H.I.O. and MPINO charge $5.00 to $10.00 per article and can take several weeks to deliver information. The telefacsimile will probably change the delivery of information time, library use studies, and the development of library collections. Presently there is no uniformity in policies concerning telefacsimile systems since not all libraries have them. Telefacsimile is still in the development stage and it may be several years before faxing information becomes a reliable and dependable source for information.[34] The future will probably see telfacsimle networks and consortiums as the primary interlibrary loan tool. In this study, telefacsimile use was counted in the interlibrary loans statistics.

Use Analyses at the Hospital Library

A six-month use study at the Northside Medical Center Library produced valuable insight into the composition of the journal collection. It is apparent that the most used titles are those which are the traditional journals in the medical profession, such as The New England Journal of Medicine. Only the first seven journals on the list in Table 1 are considered to have a high impact factor in the SCI Journal Citation Reports. The impact factor is "a measure of frequency with which the average article in a journal has been cited in a particular year."[35] The first seven journals on the hospi-

tal library list were ranked in the top 100 important journals in the SCI Journal Citation Reports.

TABLE 1

USE ANALYSIS REPORT OF THE TOP TWENTY-FIVE TITLES

RANKED BY RAW USE FREQUENCY

IN DESCENDING ORDER

Journal Title	Raw Use
1. New England Journal of Medicine	133
2. Journal of the American Medical Association	116
3. Journal of Pediatrics	84
4. Pediatrics	72
5. American Journal of Diseases of Children	72
6. Lancet	68
7. American Journal of Obstetrics and Gynecology	65
8. Obstetrics and Gynecology	59
9. American Journal of Nursing	55
10. Archives of Diseases in Children	53
11. Annals of Internal Medicine	46
12. Journal of Psychosocial Nursing & Mental Health	37
13. American Family Physician	35
14. Dimensions in Critical Care Nursing	32
15. American Journal of Psychiatry	29
16. Journal of Nursing Administration	29
17. Hospital and Community Psychiatry	27
18. American Journal of Public Health	26
19. Archives of Internal Medicine	24
20. Focus on Critical Care	23
21. Journal of Family Practice	23
22. Journal of Clinical Psychiatry	22
23. Journal of Clinical Psychology	22
24. British Journal of Obstetrics and Gynecology	20
25. Histopathology	20

After examining traditional journal titles use, different titles stand out on the list which point out the uniqueness of the library. The Northside Medical Library appears to be

used the most in the specific specialty areas of pediatrics, psychiatry, family practice and nursing.

"In keeping with the library's tradition of responding promptly to patrons' suggestions, journals that patrons request are assigned the highest priority for review and evaluation." [36] This is basically how this health science library developed. A physician recommended a journal title and it was purchased.

Listening to advice from physicians on purchasing journals doesn't necessarily build a firm foundation of quality journals. Physicians may request a journal which is of interest to only one individual or journals may have been requested by hospital departments which no longer exist. This all leads to a collection of journals which are not only not used but are using valuable space in a small library. The unused journals on Table 2 will be considered for discard. They will be checked with the Science Citation Index, titles indexed by the National library of Medicine, and with recommended lists for medical literature.

By eliminating the journals which are listed on Table 2 from the collection, four sections of standard library shelving would be made available and the money saved would be used to purchase more needed journals. It is interesting to note that three cancer journals are not being used. It may reflect that the cancer unit at Northside Medical Center is not as active as it was in the past or it might reveal that

these cancer journals are no longer popular with the hospital staff. Only an investigation of the department and the quality of the journals in question would supply the answer.

TABLE 2

USE AND COST ANALYSIS REPORT

TITLES WHICH RECEIVED NO USE

TITLE	COST
1. American Journal of Occupational Therapy	$ 55.00
2. Archives of Physical Medicine and Rehabilitation	100.00
3. Cancer Nursing	54.00
4. Cancer Treatment Reports (ceased publishing)	00.00
5. Circulation	121.00
6. Family Process	44.00
7. Health Progress	35.00
8. Healthcare Forum Journal	35.00
9. Hospital Forum (ceased publishing)	00.00
10. Journal of Ambulatory Care Management	94.00
11. Journal of Child Psychology and Psychiatry	275.00
12. Journal of Social Issues (ceased publishing)	00.00
13. Journal of Trauma	110.00
14. Medical Aspects of Human Sexuality	35.00
15. Modern Concepts in Cardiovascular Disease	20.00
16. Modern Healthcare	75.00
16. Nursing Management	25.00
16. Oncology Nursing Forum	44.00
17. Psychosomatics	99.00
18. Resident and Staff Physician	50.00
19. Seminars in Perinatology	114.00
Total	$1385.00

Checking the status and "impact factor" from the SCI Journal Citation Reports reveals some reasons why these journals were not used. Twelve journals on Table 2 were not even

listed and the remaining journals received low scores, except for the journal Circulation, which was listed in the top thirty journals. This is considered to be a very respectable score which indicates that this is an important journal. However, the fact remains that the journal received no usage at the Northside Medical Center hospital library. It may be a title which is too important to discard and it might be considered for microfiche.

Interlibrary Loan Use

Interlibrary loans are a powerful tool for measuring what the library is lacking. The Northside Medical Library receives loans in a variety of ways. They may be borrowed informally (request by telephone) on the local level from the Youngstown hospital libraries or they may be borrowed through DOCLINE, the National Library of Medicine's computerized interlibrary loan system. Loans which are entered into the computer may be sent to the local consortium of libraries in the Youngstown-Akron-Canton area and they will arrive by courier in a matter of days. Loans which go to consortiums which are out of the area or out-of-state will take one to two weeks to arrive.

Interlibrary loans are an inconvenience, especially to medical students and physicians who want information immediately. Interlibrary loans and patient care are not always

compatible. They can be life threatening.

The Northside Medical Center library borrowed 1262 journal articles in a six-month period from local hospitals at no cost and 1573 journal articles from the DOCLINE interlibrary loan system. Some libraries on DOCLINE charge for a requested article. When a library does charge for a journal title, the cost ranges from $5.00 to $10.00 per article and an extra $5.00 if the article is to be faxed. The charges for interlibrary loans for a six-month period from the DOCLINE system were $3925.00.

The hospital library loaned 343 articles to local hospitals and 335 to DOCLINE. Income received for loans with charges was $112.00.

TABLE 3

INTERLIBRARY LOANS STATISTICS

Items Borrowed	2835.00	Loaned Out	578
Cost	$3925.00	Income	$112.00

The library has basically loaned out journal articles concerned with pediatrics, obstetrics and psychology. Other libraries in the consortium depend on Youngstown North library to supply articles in these fields.

These statistics point out that the hospital library is definitely out of balance and borrowing too many journal

articles. Articles borrowed for the library came from 1252 journal titles. Most articles were borrowed less than three times from a particular journal so it is more cost effective to continue the interlibrary loan process than to obtain those journal titles.

Fifty-five titles were borrowed more than five times and should be considered for purchase. The nursing department had the largest block of interlibrary loans with 780 requests. The journal titles which were requested more than five times appear on the final recommended list for the small adult/children's hospital.

Other factors must be considered when deciding to purchase a journal which was requested more than five times. One user may request a large amount of articles from a journal which would ultimately receive little or no use in the library. For example, a psychiatrist, who was writing an article on drug abuse, requested eighteen articles from the journal Alcohol. The request was made only one time by one user for one study and the request for the journal Alcohol may never be made again. If the journal title was requested eighteen times by different users over a period of time, then the librarian should consider purchasing it.

Interlibrary loan use reveals what the collection does not have and might possibly need. It is only an indicator and should not be the only factor in considering a purchase .

Use Studies and Journal Age

There were no pre-1959 journal titles used and eight titles used were in the 1960 to 1969 time period. The only titles which date pre-1970 are pediatrics journals. The data suggest that journals dated before 1970 could be safely removed since they receive so little use.

However, in checking the holdings of local consortiums and networks, it was discovered that the Northside Medical Center library is one of a few which has a complete set of journal titles in several pediatric journals. Since other libraries are dependent on the collection, they cannot be discarded. If space became an absolutely crucial issue, the pre-1979 journals would be replaced by microfiche.

The majority of use occurred in medical journals dated from 1980 to 1990. Further examination of interlibrary loan records revealed that the largest time frame of usage occurred between 1986 and 1990.

It can be concluded that medical personnel are mostly interested in medical literature which is current and published within the last five years.

A Solution in Microfiche

Microfiche sometimes receives negative reviews because

people cannot sit down and browse through microfiche or they don't know how to use microfiche equipment. This is not a real problem at the hospital library because most of the users ask for articles from journals and the staff photocopies the articles from the journals (which do not circulate).

The hospital library could have a dynamic journal collection if it was able to purchase everything on microfiche. An example of comparative costs taken from Medical and Health Care Books and Serials in Print and Serials in Microform reveals that considerable savings and expansion of the journal collection would be the result of a microfiche collection.

TABLE 4

JOURNAL AND MICROFICHE COMPARATIVE COST

1991 PRICE LIST

JOURNAL TITLE	SERIALS IN PRINT	SERIALS IN MICROFICHE
Adolescence	$ 59.00	$17.47
American Journal of Pathology	185.00	55.40
American Journal of Sports Medicine	60.00	18.20
Circulation	121.00	78.80
Focus on Critical Care	56.00	22.10
Heart & Lung	89.00	27.00
Journal of Reproductive Medicine	110.00	33.40
Journal of School Health	80.00	16.70
Nursing Administration Quarterly	75.00	17.30
Surgery	143.00	61.70
Total	$ 978.00	$348.07

Just selecting ten journals at random demonstrated a cost savings of $629.93 by purchasing microfiche, instead of the printed issues, with an average savings of $63.00 per journal. Theoretically, a library could average a $6300.00 savings by purchasing one hundred journals on microfiche instead of the original printed issue.

Purchasing the entire collection on microfiche would probably raise the wrath of staff members who like to come in every week to read their favorite journals. The use study revealed, however, that only twenty-seven journals were read on a regular bases. Hence, these journal titles will not be considered for microfiche.

Another problem with microfiche is that most publishers will not release their journals for microfiche for a year; thus, the microfiche is not immediately available for use. This presents a problem for medical staff who want the latest information immediately. The problem of availability already exists in the medical library with standard journals which are unavailable because the journals are at the bindery.

Most biomedical literature is indexed from two months to a year after it appears in print, so there is a time lag involved in indexing. Physicians and staff normally request articles which have been indexed on a computer database, bibliography, or standard printed indexes. Between bindery and indexing, a time lag of six months to a year exists. So the problem of waiting a year for a journal on microfiche doesn't

really present much more of a problem than the problem which already exists in buying the standard journal and waiting for indexing and bindery.

In the interlibrary loan use study, in which the statistics were calculated in April 1991, only five articles with a 1991 date were requested. The majority of articles requested were published between 1986 and 1990. Microfiche, with its one year delay, can effectively fill this need.

Microfiche solves many problems in a small hospital library. It solves the problems of:

1. Space - there is no room for growth in this already crowded library.
2. Information explosion - new journal titles appear every year and microfiche is the answer to keeping the collection up-to-date.
3. Delivery of interlibrary loans - loans can take up to two weeks for delivery.
4. Cost - Microfiche is more cost effective than interlibrary loans and telefacsimile.

Recommended Lists

If the hospital library followed the recommended established lists for core collections (such as the Brandon and Hill list in the Bulletin of the Medical Library Association, the Sterns and Radcliff compilation in the New England Jour-

nal of Medicine or Allyn in Annals of Internal Medicine) the cost would average $16,000 per year.

Librarians should not be lured into ordering journals just because they are on a recommended list. For example, a check of the use study against the Brandon List revealed that the Northside Medical Center hospital library only used thirty-five journals on this list. According to Lancaster, standard lists concentrate on core materials or the best or the most obvious and such lists are of limited use.[37] It may be concluded that only a personal use study can determine what is best for a library.

The concluding list was comprised by a combination of the in-house use study, requests for journal articles, and the impact factor ratings in the SCI Journal Citation Reports.

Recommended List of Journals
For the Northside Medical Center Library

An asterisk (*) indicates that the journal is read regularly and will be recommended for the original printed copy purchase. All other titles will be recommended for microfiche.

GENERAL MEDICAL JOURNALS

JOURNAL OF THE AMERICAN MEDICAL ASSOICATION *
LANCET*
NEW ENGLAND JOURNAL OF MEDICINE *
MORBIDITY AND MORTALITY WEEKLY REPORT*

AMERICAN JOURNAL OF MEDICINE
BRITISH MEDICAL JOURNAL
CANADIAN MEDICAL ASSOCIATION JOURNAL
HOSPITAL FORUM
HOSPITAL PRACTICE
HOSPITALS
JOURNAL OF THE ROYAL COLLEGE OF GENERAL PRACTITIONERS
MAYO CLINIC PROCEEDINGS
MEDICAL CLINICS OF NORTH AMERICA
POSTGRADUATE MEDICAL JOURNAL
POSTGRADUATE MEDICINE

ANESTHESIA

ANESTHESIA AND ANALGESIA
ANESTHESIOLOGY

CARDIOLOGY

AMERICAN HEART JOURNAL
AMERICAN JOURNAL OF CARDIOLOGY
PEDIATRIC CARDIOLOGY

INFECTIOUS DISEASE

AMERICAN JOURNAL OF EPIDEMIOLOGY*

JOURNAL OF INFECTIOUS DISEASE
INFECTIOUS DISEASE CLINICS OF NORTH AMERICA

NUTRITION

AMERICAN JOURNAL OF CLINICAL NUTRITION
JOURNAL OF THE AMERICAN DIETETIC ASSOCIATION
JOURNAL OF PARENTERAL AND ENTERAL NUTRITION

NURSING

AMERICAN JOURNAL OF NURSING*
JOURNAL OF NURSING ADMINISTRATION*
NURSING*
NURSING CLINICS OF NORTH AMERICA*

ANNA JOURNAL
A.O.R.N. JOURNAL
CRITICAL CARE NURSE
DIMENSIONS IN CRITICAL CARE NURSING
HEART AND LUNG
HOME HEALTHCARE NURSE
JOURNAL OF ADVANCED NURSING

JOURNAL OF CONTINUING EDUCATION IN NURSING
JOURNAL OF NURSE-MIDWIFERY
JOURNAL OF OBSTETRICS, GYNECOLOGY & NEONATAL NURSING
JOURNAL OF PSYCHOSOCIAL NURSING AND MENTAL HEALTH
JOURNAL OF SCHOOL HEALTH
MCN: AMERICAN JOURNAL OF MATERNAL CHILD NURSING
NURSE EDUCATOR
NURSING ADMINISTRATION QUARTERLY
NURSING MANAGEMENT
NURSING STANDARD
ONCOLOGY NURSING FORUM
PEDIATRIC NURSING
RN

OBSTETRICS AND GYNECOLOGY

AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY*
OBSTETRICAL AND GYNECOLOGICAL SURVEY*
OBSTETRICS AND GYNECOLOGY*

AUSTRALIAN & NEW ZEALAND JOURNAL OF OBSTETRICS & GYNECOLOGY
BRITISH JOURNAL OF OBSTETRICS AND GYNECOLOGY
FERTILITY AND STERILITY
JOURNAL OF REPORDUCTIVE MEDICINE
OBSTETRICS AND GYNECOLOGY CLINICS OF NORTH AMERICA

PATHOLOGY

AMERICAN JOURNAL OF PATHOLOGY
ARCHIVES OF PATHOLOGY AND LABORATORY MEDICINE
PEDIATRIC PATHOLOGY

PEDIATRICS

AMERICAN JOURNAL OF DISEASES OF CHILDREN*
ARCHIVES OF DISEASES IN CHILDREN*
CLINICAL PEDIATRICS*
CURRENT PROBLEMS IN PEDIATRICS*
JOURNAL OF DEVELOPMENTAL AND BEHAVIORAL PEDIATRICS*
JOURNAL OF PEDIATRICS*
PEDIATRIC CLINICS OF NORTH AMERICA*
PEDIATRIC INFECTIOUS DISEASE JOURNAL*
PEDIATRIC ANNALS*
PEDIATRICS*
PEDIATRICS IN REVIEW*

ACTA PAEDIATRICA SCANDINAVICA
EUROPEAN JOURNAL OF PEDIATRICS
JOURNAL OF CHILD NEUROLOGY
PEDIATRIC HEMATOLOGY AND ONCOLOGY

PSYCHIATRY

HOSPITAL AND COMMUNITY PSYCHIATRY*

ADOLESCENCE
AMERICAN JOURNAL OF PSYCHIATRY
ARCHIVES OF GENERAL PSYCHIATRY
BRITISH JOURNAL OF PSYCHIATRY
JOURNAL OF CLINICAL PSYCHIATRY
JOURNAL OF CLINICAL PSYCHOLOGY
JOURNAL OF NEUROLOGY, NEUROSURGERY, AND PSYCHIATRY
PSYCHIATRIC CLINICS OF NORTH AMERICA

RESPIRATORY

AMERICAN REVIEW OF RESPIRATORY DISEASE
CHEST
PEDIATRIC PULMUNARY

SURGERY

ANNALS OF SURGERY*
SURGICAL CLINICS OF NORTH AMERICA*

AMERICAN JOURNAL OF SURGERY
ANNALS OF SURGERY
ANNALS OF THORACIC SURGERY
ARCHIVES OF SURGERY
CURRENT PROBLEMS IN SURGERY
JOURNAL OF CARDIOVASCULAR SURGERY
JOURNAL OF PEDIATRIC SURGERY
SURGERY

MISCELLANEOUS SPECIALITIES

JOURNAL OF FAMILY PRACTICE*
JOURNAL OF UROLOGY*

AMERICAN JOURNAL OF CLINICAL NUTRITION
AMERICAN JOURNAL OF HUMAN GENETICS
AMERICAN JOURNAL OF PUBLIC HEALTH
AMERICAN JOURNAL OF SPORTS MEDICINE
ANNALS OF INTERNAL MEDICINE
ARCHIVES OF INTERNAL MEDICINE
CANCER
CHEST
CIRCULATION
DIABETES CARE
FOCUS ON CRITICAL CARE
GERIATRICS

HISTOPATHOLOGY
JOURNAL OF BURN CARE AND REHABILITATION
JOURNAL OF FAMILY PRACTICE
PHYSICAL THERAPY

CHAPTER 5

SUMMARY AND CONCLUSIONS

The use study established that a hospital library journal collection is a reflection of its departments. Large, active and productive departments make the most demands on the library. Northside's Tod's Babies Hospital continues to expand and this leads to increased demands on the library. The library now has a core collection of pediatric journals, but needs to add more quality journals to meet the current needs.

Pathology, genetics, psychiatry, nursing and family practice, and surgery need a core collection in the library, so it is not necessary to interlibrary loan so many requests and have staff members waiting for information.

Journals which are not used regularly are usually a reflection of departments which no longer exist in the hospital, such as, sports medicine and geriatrics. The librarian has to be aware of which departments are expanding or departing and adjust the collection to meet those needs.

Interlibrary loans reveal the weaknesses of the collection. If a journal title is regularly being requested, that is an indication that the title should be added to the hospi

tal library journal collection.

The use study revealed that measures must be taken to keep a quality collection of journals. The continuing rise in the cost of journals and the lack of space in the hospital library make microfiche the only answer to keeping the library up-to-date.

The hospital library currently subscribes to 110 journals at a cost of $10,000 and subscribes to twenty-five journals on microfiche at a cost of $859.00. The research done on this library leads one to the conclusion that the library would function best by reversing the numbers to approximately twenty-five printed journals and 100 plus on microfiche. It is only through microfiche that the library could consolidate all of the journal titles, now in department libraries, into one area. It is the only way that the library can fight rising cost and continue to maintain a quality collection.

The final comment about use studies is that the librarian cannot do a study and consider only one library. Today, the librarian has to think, plan and order globally and plan and order as a part of a whole while considering not only the obligations to the hospital and the staff, but also to consortiums and networks.

Recommendation for future study: It would be interesting to investigate small hospital libraries in different areas to learn how each individual library is coping with increased cost, lack of space and the information explosion.

Help!

APPENDEX A

We are attempting to monitor library journal use. Please initial below each time you have consulted this item.

Thank you!

Title _____

_____

Received _____

APPENDEX B

We are conducting a Library Audit

PLEASE DO NOT RESHELVE ANY BOOKS OR JOURNALS

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[16]Ibid., 220.

[17]Philip H. Abelson, "Combating High Journal Costs," Science 244 (June 1989): 1125.

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[24]Ibid.

[25]Eugene Garfield, "Which Medical Journals Have the Greatest Impact?" Annals of Internal Medicine 105 (August 1986): 313.

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[30] Lancaster, 23.

[31] Eugene Garfield, ed., "Introduction," Current Contents 19 (January 7, 1991): 1.

[32] Marilyn Berger, "Serials Evaluation: An Innovative Approach. " Special Libraries (Summer 1990): 183.

[33] National Library of Medicine, List of Serials Indexed for Online Users - 1990 (Washington: U.S. Department of Commerce, 1990): i.

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[35] Eugene Garfield, ed., SCI Journal Citation Reports (Philadelphia: Institute for Scientific Information, Inc., 1988), 10A.

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